WE CLAIM AS OUR INVENTION:

1. A multi-chamber pacing system comprising:

a pulse generator for generating pacing pulses adapted for delivery to multiple chambers of a heart;

a plurality of sensing elements adapted to respectively receive and sense IEGM signals from the multiple chambers;

a control unit connected to said sensing elements for blanking sensing of said IEGM signals in respective blanking intervals following each delivery of a pacing pulse by said pulse generator; and

a signal reconstructing unit connected to said sensing elements for reconstructing the IEGM signal from one of said multiple chambers in the blanking interval following delivery of one of said pacing pulses to a different chamber among said multiple chambers.

2. A multi-chamber pacing system as claimed in claim 1 wherein said IEGM signal in said blanking interval has a signal morphology, and wherein said signal reconstructing unit identifies said signal morphology and, dependent on said signal morphology, selects a procedure from among a plurality of different predetermined procedures for reconstructing said IEGM signal in said blanking interval.

3. A multi-chamber pacing system as claimed in claim 1 wherein said signal reconstructing unit reconstructs said IEGM signal in said blanking interval by determining an instantaneous slope of said IEGM signal at a beginning of said blanking interval, and by linearly extrapolating said IEGM signal in said blanking interval using said instantaneous slope.

4. A multi-chamber pacing system as claimed in claim 1 wherein said IEGM signal has a minimum in said blanking interval, and wherein said signal reconstructing unit reconstructs said IEGM signal in said blanking interval by determining an instantaneous first slope of said IEGM signal at a beginning of said blanking interval, by determining an instantaneous second slope of said IEGM signal at an end of said blanking interval, and by linearly extrapolating said IEGM signal forwardly from said beginning of said blanking interval in a forward linear extrapolation using said first slope, and rearwardly from said end of said blanking interval in a rearward linear extrapolation using said second slope, to an intersection point of said forward linear extrapolation and said rearward linear extrapolation.

5. A multi-chamber pacing system as claimed in claim 1 wherein said signal reconstructing unit reconstructs said IEGM signal in said blanking interval as a constant equal to an average value of signal values of said IEGM signal at limits of said blanking interval.

6. A multi-chamber pacing system as claimed in claim 1 wherein said signal reconstructing unit reconstructs said IEGM signal in said blanking interval using a plurality of IEGM signal values preceding said blanking interval and succeeding said blanking interval, according to a polynomial of a predetermined degree.

7. A multi-chamber pacing system as claimed in claim 1 wherein said signal reconstructing unit includes a filter, and wherein said signal reconstructing unit reconstructs said IEGM signal in said blanking interval by filtering said IEGM signal with said filter in a filtration time interval having a predetermined duration, said filtration time interval containing said blanking interval.

8. A multi-chamber pacing system as claimed in claim 7 wherein said filter is an FIR filter having filter coefficients equal to zero in said blanking interval.

9. A multi-chamber pacing system as claimed in claim 1 comprising a memory accessible by said signal reconstructing unit, said signal reconstructing unit storing a complete IEGM signal obtained in advance of said blanking interval, and wherein said signal reconstructing unit reconstructs said IEGM signal in said blanking interval using the stored IEGM signal from said memory.

10. A multi-chamber pacing system as claimed in claim 1 comprising at least one implantable lead having a tip electrode and a ring electrode, said electrode lead being connected to said pulse generator and to said sensing elements, and said multi-chamber pacing system further comprising a housing containing said pulse generator, said sensing elements and said signal reconstructing unit, and wherein said sensing elements measure said IEGM signals in the respective chambers between said tip electrode and said housing and between said ring electrode and said housing, and wherein said multi-chamber pacing system comprises a memory, accessible by said signal reconstructing unit, in which said IEGM signals are stored, and wherein said signal reconstructing unit reconstructs said IEGM signal measured between said tip electrode and said housing using a portion of the stored IEGM signal measured between the ring electrode and the housing, which corresponds to the blanking interval for the IEGM signal measured between the tip electrode and the housing.

11. A multi-chamber pacing system as claimed in claim 1 comprising a housing, adapted for intracorporeal implantation, containing said pulse generator, said sensing elements and said signal reconstructing unit, and wherein said multi-chamber pacing system comprises a telemetry arrangement and an external programmer, said telemetry arrangement transmitting said reconstructed IEGM signals extracorporeally to said programmer.

12. A multi-chamber pacing system as claimed in claim 11 wherein said programmer comprises a display for presenting a visual display of said reconstructed IEGM signals, together with corresponding ECG signals.

13. A multi-chamber pacing system as claimed in claim 11 wherein said programmer comprises a printer for printing out said reconstructed IEGM signals together with corresponding ECG signals.

14. A multi-chamber pacing system as claimed in claim 1 wherein said one of said chambers is a first chamber and wherein said other, different chamber is a second chamber, and comprising a first evoked response detector for said first chamber and a second evoked response detector for said second chamber, said first evoked response detector operating with an evoked response detection time window that occurs after delivery of a pacing pulse from said pulse generator to said first chamber and that contains the blanking interval resulting from delivery of said pacing pulse to said second chamber, and said second evoked response detector operating with an evoked response detection time window that occurs after delivery of a pacing pulse to said second chamber, and wherein said first evoked response detector detects an evoked response in said first chamber by integrating the reconstructed IEGM signal occurring in said evoked response detection time window of said first evoked response detector, and wherein said second evoked response detector detects an evoked response in said second chamber by integrating the IEGM signal occurring in said evoked response detection time window of said second evoked response detector.